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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,504	03/11/2004	Eyal Shlomot	0160116	8326

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EXAMINER

WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/799,504

Applicant(s)

SHLOMOT ET AL.

Examiner

James S. Wozniak

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claim 2** is objected to because of the following informalities:

“Speech signal” on lines 1-2 of Claim 2 should be changed to --a speech signal--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurittu et al (U.S. Pub: 2004/0120309) in view of Iijima et al (*U.S. Patent: 5,909,663*).

With respect to **Claims 1 and 8**, Kurittu recites:

Obtaining a current input speech frame, said frame having a start-point and an endpoint
(receiving speech frames that would each have an inherent start and end point, Paragraph [0077]);

Reconstructing said current input speech frame from a previous input speech frame if
said current input speech frame is lost *(replicating a previous speech frame, Paragraph [0088]);*

Creating a time-warped current input speech frame and a time-warped reconstructed frame from previous input speech frame by continuously time warping said current input speech frame and a copy of said previous input speech frame if said current input speech frame is correctly received and said previous input speech frame is reconstructed (*time alignment implemented using an overlap add operation, Paragraphs [0088-89]*); and

Kurittu does not specifically suggest the fading operation recited in Claim 1, however Iijima recites:

Fading simultaneously said time-warped current input speech frame and said time-warped reconstructed frame from previous input speech frame to obtain an improved current frame (*fading frames of speech data in and out, Col. 35, Lines 35-67*).

Kurittu and Iijima are analogous art because they are from a similar field of endeavor in speech data error concealment. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, modify the teachings of Kurittu with the fading operation taught by Iijima to implement more efficient speech post processing that provides a smoother transition between speech frames by eliminating undesirable noises that result from pitch variations between frames (*Iijima, Col. 35, Lines 35-50*).

With respect to **Claims 2 and 9**, Kurittu discloses:

The speech frame comprises a speech signal having zero or more pitch cycles (*speech data having a pitch period, Paragraph [0088]*).

With respect to **Claims 3 and 10**, Kurittu recites:

Shifting one or more peaks of said pitch cycles of said current input speech frame and one or more peaks of said pitch cycles of said copy of previous input speech frame to provide

overlap of at least one of said one or more pitch cycles (*overlapping of time extended speech frames, Paragraph [0089]*).

With respect to **Claims 4 and 11**, Kurittu shows:

The endpoint of the current input speech frame remains fixed during the time warping process (*endpoint of a second frame, which remains fixed after time alignment processing, Fig. 2*).

With respect to **Claims 5 and 12**, Kurittu discloses:

Copying the previous input speech frame as the current input speech frame (*replicating a previous speech frame, Paragraph [0088]*).

With respect to **Claims 6 and 13**, Iijima additionally discloses:

Fading in said time-warped current input speech frame; and fading out said time-warped reconstructed frame of said copy of said previous input speech frame (*Col. 35, Lines 57-67*).

With respect to **Claims 7 and 14**, Iijima further recites:

The fading is a linear fade operation (*gradual fading, Col. 35, Lines 57-67*).

With respect to **Claim 15**, Kurittu in view of Iijima teaches the speech decoding method utilizing time alignment through an overlap add operation and frame fading, as applied to Claim 1. Kurittu in view of Iijima does not specifically suggest method storage as a program on a computer readable medium, however, the examiner takes official notice that it would have been obvious to one of ordinary skill in the art, at the time of invention, to store the speech decoding method taught by Kurittu in view of Iijima as a program on a computer readable medium to increase method compatibility and usability by providing a means for method use with multiple computer systems.

Claims 16-21 contain subject matter similar to Claims 2-7, respectively, and thus, are rejected for the same reasons.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Gerson et al (*U.S. Patent: 4,751,737*)- teaches the use of dynamic time warping to optimally align speech data frames.

Benyassine et al (*U.S. Patent: 6,636,829*)- teaches a method for handling lost speech frames.

Yokoyama et al (*U.S. Patent: 6,775,654*)- teaches a method for replacing a lost frame with a previous neighboring frame and is capable of time adjusting data frames to provide proper audio continuity.

Mattilla et al (*U.S. Patent: 6,810,213*)- teaches the replacement of a lost frame by replicating a previous frame and implements an overlap-add process to suppress noise artifacts in a frame boundary region.

Coorman et al (*U.S. Pub: 2002/0133334*)- teaches a time warp function applied to speech data, defined as the time repositioning of frames.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (703) 305-8669

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and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached at (703) 305-4827. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak
1/12/2005



DAVID L. OMETZ
PRIMARY EXAMINER